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§ 1203.5 Construction requirements—projections.

Any unfaired projection extending more than 7 mm (0.28 in.) from the helmet's outer surface shall break away or collapse when impacted with forces equivalent to those produced by the applicable impact-attenuation tests in § 1203.17 of this standard. There shall be no fixture on the helmet's inner surface projecting more than 2 mm into the helmet interior.

§ 1203.6 Labeling and instructions.

(a) *Labeling*. Each helmet shall be marked with durable labeling so that the following information is legible and easily visible to the user:

(1) Model designation.

(2) A warning to the user that no helmet can protect against all possible impacts and that serious injury or death could occur.

(3) A warning on both the helmet and the packaging that for maximum protection the helmet must be fitted and attached properly to the wearer's head in accordance with the manufacturer's fitting instructions.

(4) A warning to the user that the helmet may, after receiving an impact, be damaged to the point that it is no longer adequate to protect the head against further impacts, and that this damage may not be visible to the user. This label shall also state that a helmet that has sustained an impact should be returned to the manufacturer for inspection, or be destroyed and replaced.

(5) A warning to the user that the helmet can be damaged by contact with common substances (for example, certain solvents [ammonia], cleaners [bleach], etc.), and that this damage may not be visible to the user. This label shall state in generic terms some recommended cleaning agents and procedures (for example, wipe with mild soap and water), list the most common substances that damage the helmet, warn against contacting the helmet with these substances, and refer users to the instruction manual for more specific care and cleaning information.

(6) *Signal word*. The labels required by paragraphs (a) (2) through (5) of this section shall include the signal word ''WARNING'' at the beginning of each statement, unless two or more of the statements appear together on the same label. In that case, the signal word need only appear once, at the beginning of the warnings. The signal word ''WARNING'' shall be in all capital letters, bold print, and a type size equal to or greater than the other text on the label.

(b) *Instructions*. Each helmet shall have fitting and positioning instructions, including a graphic representation of proper positioning.

§ 1203.7 Samples for testing.

(a) *General*. Helmets shall be tested in the condition in which they are offered for sale. To meet the standard, the helmets must be able to pass all tests, both with and without any attachments that may be offered by the helmet's manufacturer and with all possible combinations of such attachments.

(b) *Number of samples*. To test conformance to this standard, eight samples of each helmet size for each helmet model offered for sale are required.

§ 1203.8 Conditioning environments.

Helmets shall be conditioned to one of the following environments prior to testing in accordance with the test schedule at § 1203.13. The barometric pressure in all conditioning environments shall be 75 to 110 kPa (22.2 to 32.6 in of Hg). All test helmets shall be stabilized within the ambient condition for at least 4 hours prior to further conditioning and testing. Storage or shipment within this ambient range satisfies this requirement.

(a) *Ambient condition*. The ambient condition of the test laboratory shall be within 17°C to 27°C (63°F to 81°F), and 20 to 80% relative humidity. The ambient test helmet does not need further conditioning.

(b) *Low temperature*. The helmet shall be kept at a temperature of −17°C to −13°C (1°F to 9°F) for 4 to 24 hours prior to testing.

(c) *High temperature*. The helmet shall be kept at a temperature of 47°C to 53°C (117°F to 127°F) for 4 to 24 hours prior to testing.

(d) *Water immersion*. The helmet shall be fully immersed ''crown'' down in potable water at a temperature of 17°C to

27°C (63°F to 81°F) to a crown depth of 305 mm ± 25 mm (12 in. ± 1 in.) for 4 to 24 hours prior to testing.

§ 1203.9 Test headforms.

The headforms used for testing shall be selected from sizes A, E, J, M, and O, as defined by DRAFT ISO/DIS 6220–1983, in accordance with § 1203.10. Headforms used for impact testing shall be rigid and be constructed of low-resonance K–1A magnesium alloy.

§ 1203.10 Selecting the test headform.

A helmet shall be tested on the smallest of the headforms appropriate for the helmet sample. A headform size is appropriate for a helmet if all of the helmet's sizing pads are partially compressed when the helmet is equipped with its thickest sizing pads and positioned correctly on the reference headform.

§ 1203.11 Marking the impact test line.

Prior to testing, the impact test line shall be determined for each helmet in the following manner.

(a) Position the helmet on the appropriate headform as specified by the manufacturer's helmet positioning index (HPI), with the brow parallel to the basic plane. Place a 5-kg (11-lb) preload ballast on top of the helmet to set the comfort or fit padding.

(b) Draw the impact test line on the outer surface of the helmet coinciding with the intersection of the surface of the helmet with the impact line planes defined from the reference headform as shown in:

(1) Figure 4 of this part for helmets intended only for persons 5 years of age and older.

(2) Figure 5 of this part for helmets intended for persons age 1 and older.

(c) The center of the impact sites shall be selected at any point on the helmet on or above the impact test line.

§ 1203.12 Test requirements.

(a) *Peripheral vision*. All bicycle helmets shall allow unobstructed vision through a minimum of 105° to the left and right sides of the midsagittal plane when measured in accordance with § 1203.14 of this standard.

(b) *Positional stability*. No bicycle helmet shall come off of the test headform when tested in accordance with § 1203.15 of this standard.

(c) *Dynamic strength of retention system*. All bicycle helmets shall have a retention system that will remain intact without elongating more than 30 mm (1.2 in.) when tested in accordance with § 1203.16 of this standard.

(d) *Impact attenuation criteria*.

(1) *General*. A helmet fails the impact attenuation performance test of this standard if a failure under paragraph (d)(2) of this section can be induced under any combination of impact site, anvil type, anvil impact order, or conditioning environment permissible under the standard, either with or without any attachments, or combinations of attachments, that are provided with the helmet. Thus, the Commission will test for a ''worst case'' combination of test parameters. What constitutes a worst case may vary, depending on the particular helmet involved.

(2) *Peak acceleration*. The peak acceleration of any impact shall not exceed 300 g when the helmet is tested in accordance with § 1203.17 of this standard.

§ 1203.13 Test schedule.

(a) Helmet sample 1 of the set of eight helmets, as designated in Table 1203.13, shall be tested for peripheral vision in accordance with § 1203.14 of this standard.

(b) Helmet samples 1 through 8, as designated in Table 1203.13, shall be conditioned in the ambient, high temperature, low temperature, and water immersion environments as follows: helmets 1 and 5—ambient; helmets 2 and 7—high temperature; helmets 3 and 6—low temperature; and helmets 4 and 8—water immersion.

(c) Testing must begin within 2 minutes after the helmet is removed from the conditioning environment. The helmet shall be returned to the conditioning environment within 3 minutes after it was removed, and shall remain in the conditioning environment for a minimum of 2 minutes before testing is resumed. If the helmet is out of the conditioning environment beyond 3 minutes, testing shall not resume until the helmet has been reconditioned for a period equal to at least 5 minutes for